AUDIOTRONICS

MODEL 304T & 304VT
RECORD PLAYER SERVICE DATA
Designed, Engineered and Manufactured by Audiotronics

MODEL 304T 304VT

MANUAL PR-363
AUGUST, 1979

TECHNICAL SUMMARY

Power Output . . . . . .10/18 Watts*
Amplifier Frequency Response . . . . . 20Hz-20KHz ±2db
Dual Action Tone Control (R13)

Bass Boost . . . . . +10db
Treble Cut . . . . . −15db

Volume Control (R12) set at Tap position, 60% of rotation from minimum, and input adjusted for 0 db output (0.78 volts RMS). Maximum bass boost and maximum treble cut is accomplished when the tone control (R13) is rotated to the full clockwise position.

Aux gain (R14) is provided to compensate for cartridge and speaker efficiency. It is factory adjusted (Volume at maximum and Tone control at mid-range) so that the output signal just clips with a .8 volts RMS signal (1 KHz) applied to the input terminals. If necessary, readjust R14 to control reverberation.

Speaker Impedance . . . . . 8 OHMS MIN

Note: All ratings are nominal. Specifications are subject to change without notice.

*Ratings in accordance with ANSI Standard (PH6-2-1973). "10/18 Watts" means 10 watts of continuous power and 18 Watts in momentary power, both at 5% distortion.

SERVICE GUIDE

We have combined the service information on the Audiotronics Models 304T and 304VT. Both units are four speed monaural record players featuring easy action pause control with instant brake. Both units are identical except that the 304 VT has a variable speed control that permits the record speed to be decreased from the basic 16, 33, 45, and 78 RPM settings for improved tone control.

Both units utilize a solid state amplifier providing dependable performance with a minimum of service. The circuitry and controls are integrally mounted on a printed circuit board to simplify service and/or replacement. The design is virtually maintenance free, requiring no initial set-up. (SEE TECHNICAL SUMMARY FOR SPECIFICATION RATINGS.)

CAUTION: Do not connect any series or parallel combination of speakers where total impedance is less than eight ohms as it reflects excessive load on amplifier, resulting in distortion and overall poor sound quality, as well as possible damage to the amplifier.

The variable speed control on Model 304VT is extremely reliable and should require little or no maintenance. The only adjustment necessary for optimum performance is to align the speed disc in the center of the magnetic assembly and to be sure the magnets are horizontal and parallel to each other.

The motors and mechanical assembly used with these models provide many years of trouble-free performance with minimum care. During normal operation, however, evaporating oil mixes with dust to form a scum which degrades performance of record player. The following yearly routine maintenance is recommended to insure maximum life:

1. Thoroughly clean motor and mechanical assemblies with Isoprophyl alcohol or equivalent. Lightly oil motor bearings and apply a light stick lubricant to moving mechanical assembly. Be careful oil does not contact with any surface idler wheel contacts.

2. The turntable rim must be cleaned with alcohol solution. Invisible residue, such as finger prints, can cause uneven speed or slipping.

3. The motor pulley is cleaned by holding an alcohol-soaked cloth on each step of pulley while motor is spinning. Be sure crevices are clean on each step.

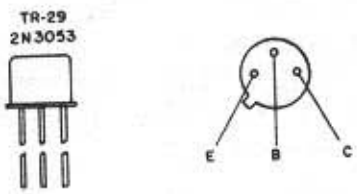
4. Remove idler wheel and clean thoroughly with alcohol. Inspect wheel and replace with a new one if wheel appears glazed or worn. Be sure not to touch driving surface of wheel during assembly.

5. Cartridge replacement depends on overall usage and handling. Optimum performance is maintained if cartridge is replaced when it shows signs of wearing. Both the 9J, and its replacement, the 89T cartridge, use a sapphire tip and will begin to cause record wear after a nominal 25 hours of use. However, it is recommended cartridge be replaced as part of the yearly maintenance program.

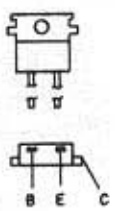
6. The holder for cartridge should be checked to ensure tight mounting. Skipping or poor sound may be caused by loose cartridge holder.

TRANSISTOR CHART

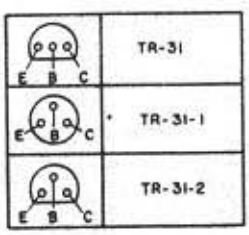
TR-29



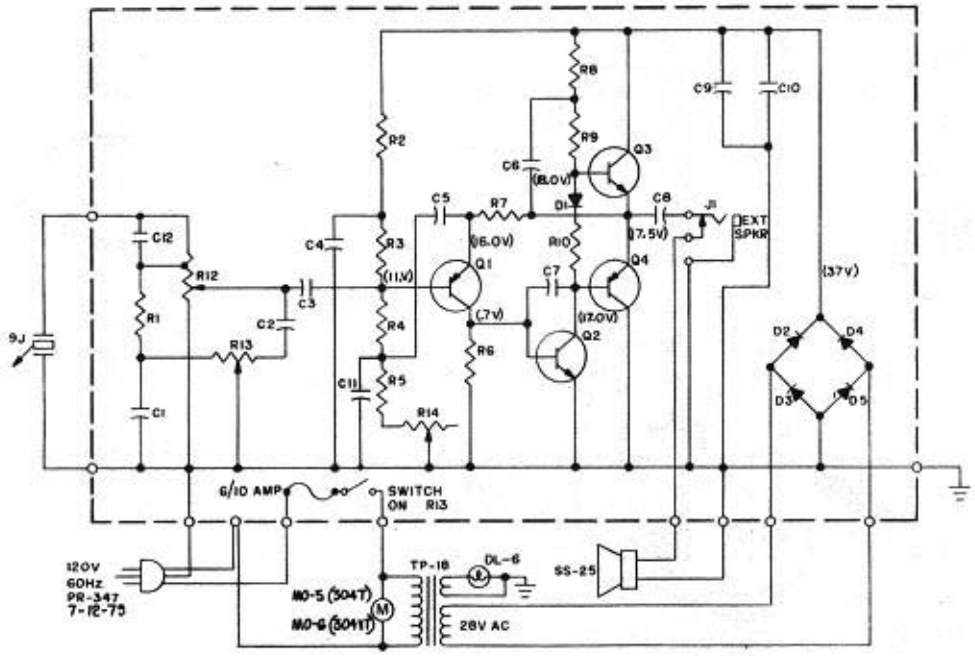
TR-35
2N6291
TR-36
2N6108



TR-31
2N4122



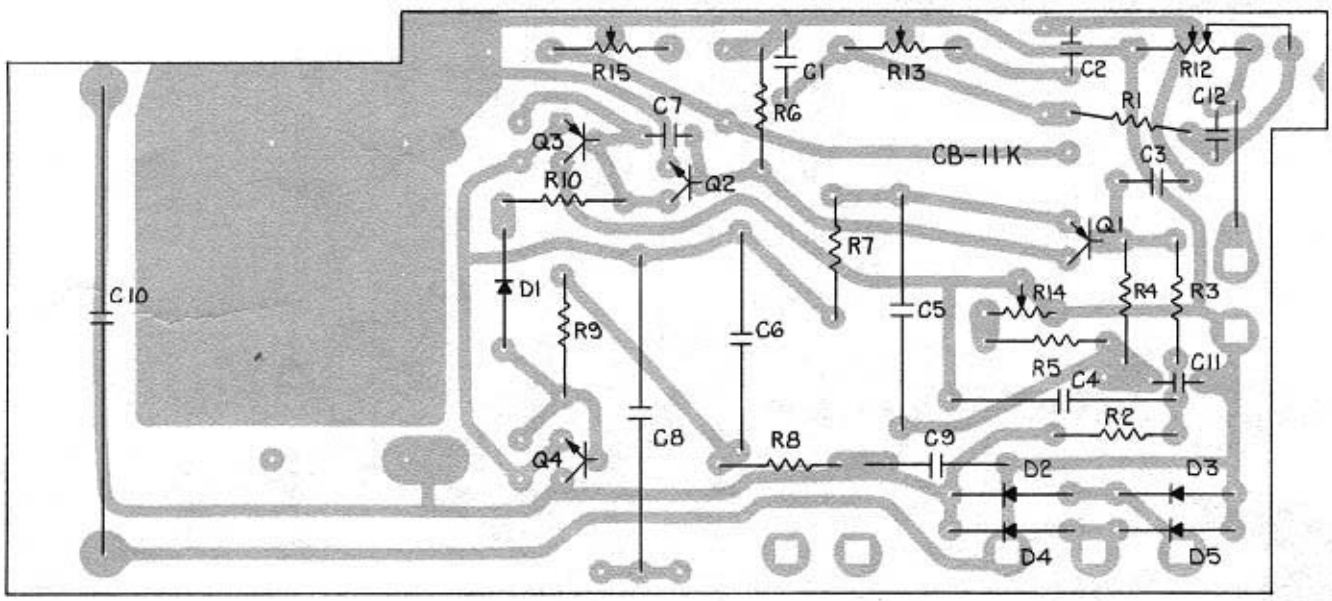
MODEL 304T & 304VT
SCHEMATIC



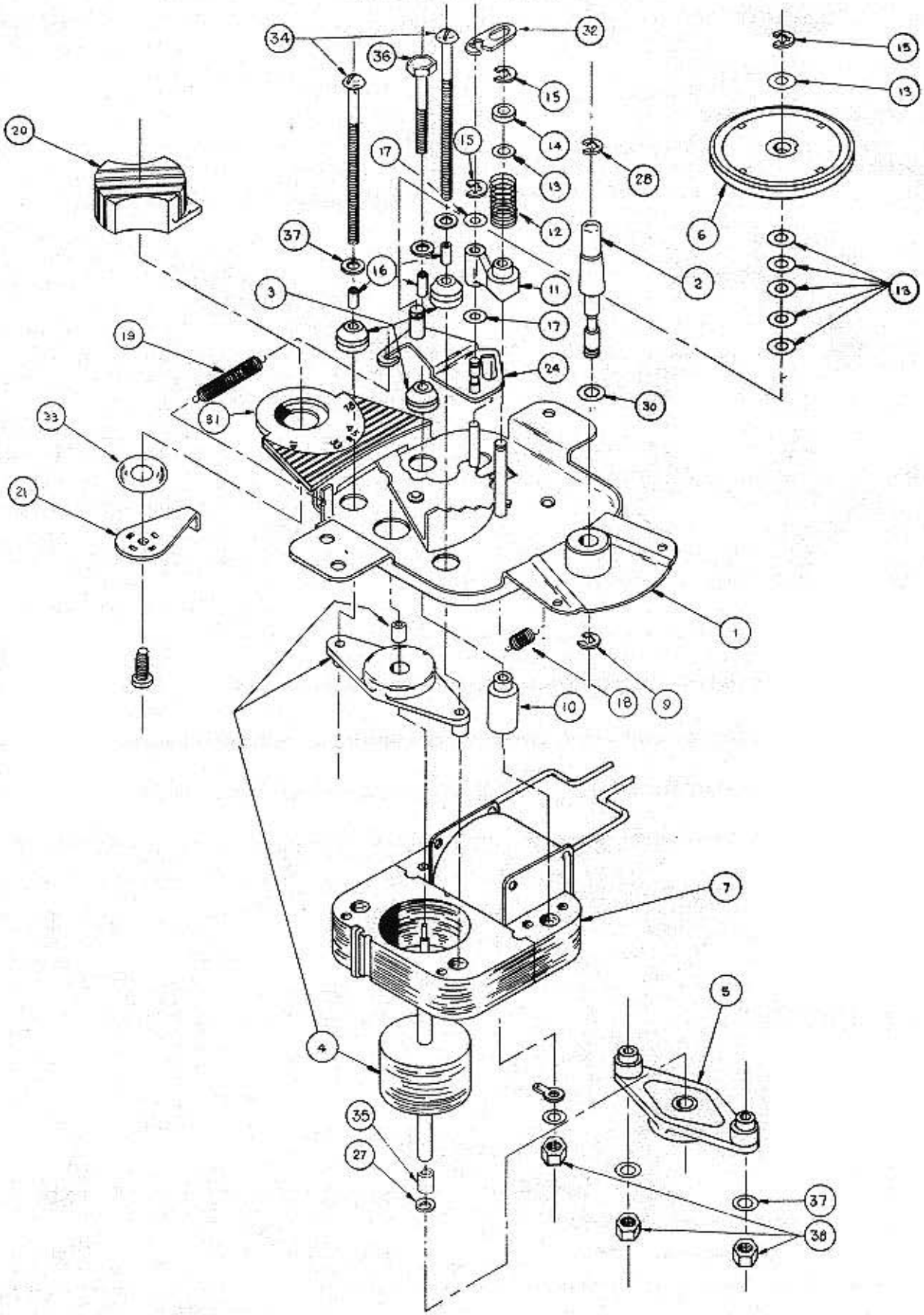
R1-33K
R2-150K
R3-820K
R4-680K
R5-100
R6-10K
R7-3300
R8-220
R9-220
R10-6.8
R12-1meg, RP73
R13-2meg, RP80
R14-500, RP66
C1-.005
C2-.002
C3-0.1
C4-10/40V
C5-100/40V
C6-100/40V
C7-47P
C8-470
C9-.22
C10-1000/40V
C11-47 P
C12-470 P
Q1-TR31
Q2-TR29
Q3-TR35
Q4-TR36
D1-D5-SR60

NOTES:
1. VOLTAGES MEASURED WITH NO SIGNAL USING 20,000 Ω PER VOLT METER
2. ALL RESISTORS $\frac{1}{2}$W, 10%
3. ALL CAPACITANCE VALUES IN MFD UNLESS OTHERWISE SPECIFIED

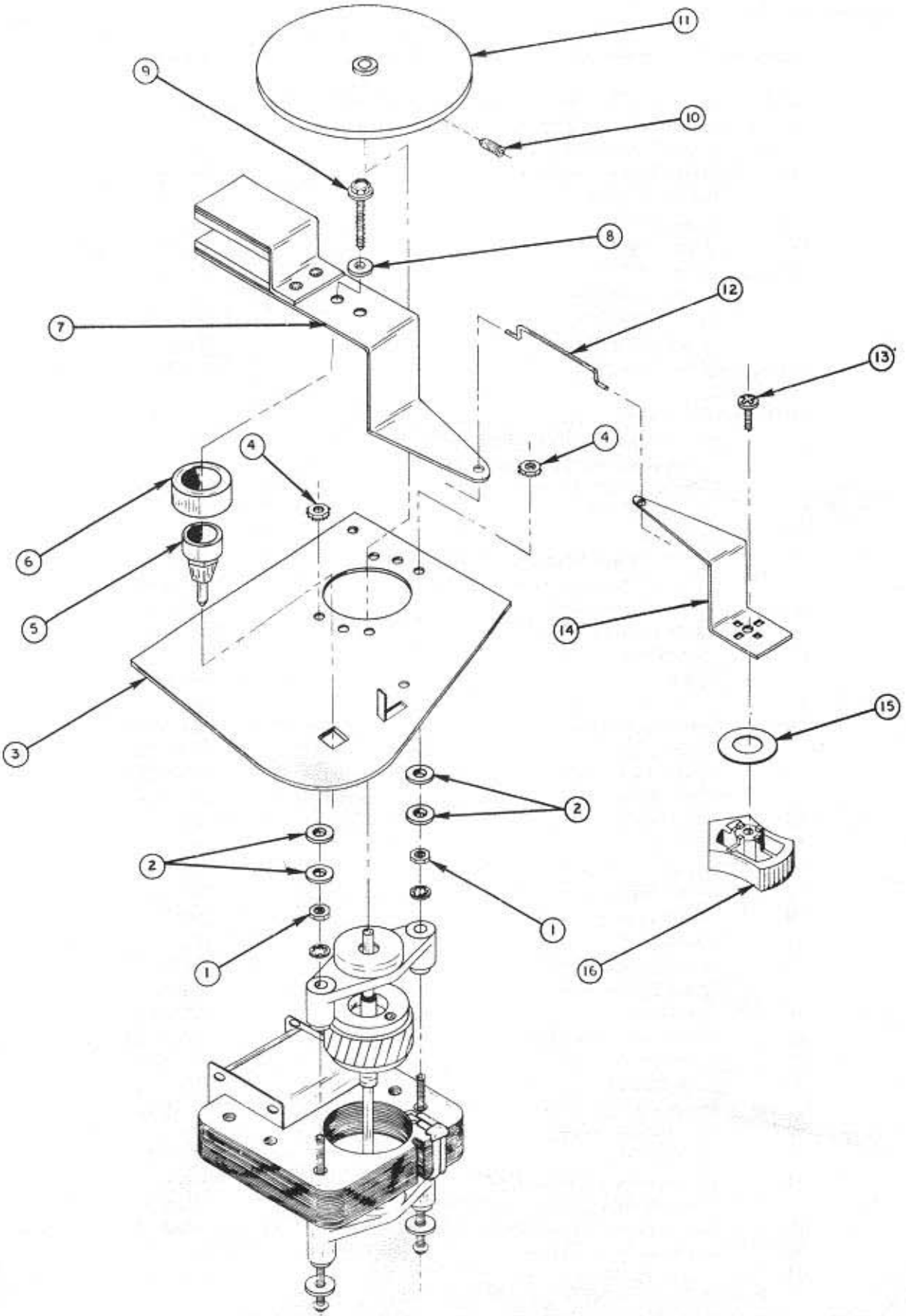
P.C. BOARD
COMPONENT LAYOUT



MODEL MO5 & MO6 FOUR SPEED PLAYER MOTOR
FOR
MODEL 304T & 304VT



VARIABLE SPEED CONTROL ASSEMBLY MO-6



AUDIOTRONICS MODEL 304T & 304VT
REPLACEMENT PARTS

When ordering parts, please indicate the part number, description and model. Do not use symbol number.

Symbol No.	Description	Part No.
AMPLIFIER PRINTED CIRCUIT BOARD ASSEMBLY		FP-81
R12	1 Meg Volume Control	RP-73
R13	2 Meg Tone Control	RP-80
R14	500 ohm Bias Control	RP-66
Q1	Pre-Amp (PNP)	TR-31
Q2	Driver (NPN)	TR-29
Q3	Output (NPN)	TR-35
Q4	Output (PNP)	TR-36
	Output Heat Sink	SM-380
	Driver Heat Sink	HW-231
	Insulator for Q3	SO-16
D1-5	Silicon Diode	SR-20
MOTOR ASSEMBLY		
	Motor Assembly (Complete) 304T	MO-5
	Motor Assembly (Complete) 304VT	MO-6
1	Mounting Plate Assembly	MO-1-15
2	Turntable Shaft	MO-1-21
3	Grommet	MO-5-6
4	Rotor/Upper Bearing Assy (304T)	MO-5-10
	Rotor/Upper Bearing Assy (304VT)	MO-6-10
5	Lower Bearing (304T)	MO-5-4
	Lower Bearing (304VT)	MO-6-4
6	Idler Wheel	MO-1-36
7	Stator	MO-5-2
9	"E" Clip	MO-1-9
10	Mounting Spacer	MO-5-5
11	Toggle Link	MO-1-25
12	Compression Spring	MO-1-29
13	Fiber Washer	MO-1-37
14	Cup Washer	MO-1-30
15	"E" Clip	MO-1-9
16	Spacer	MO-1-33
17	Metal Washer	MO-1-17
18	Detent Spring	MO-2-7
19	Idler Spring	MO-1-14
20	Speed Change Knob	KN-11
21	Speed Change Lever	HW-77
24	Idler Arm	MO-23-5
27	Washer for Rotor Shaft (304VT only)	MO-23-29
28	Turntable "E" Clip	HW-134
30	Fiber Washer	MO-1-23
31	Mounting Plate Cover	MO-1-26
32	Idler Release Bracket	SM-177
33	Spring Washer	MO-1-40
34	Long Mounting Screw (304T)	MO-5-7
	Long Mounting Screw (304VT)	MO-6-5
35	Spacer Under Rotor (304VT only)	MO-6-11
36	Short Mounting Screw	MO-5-8
37	Washer for Mounting Screw	MO-1-43

AUDIOTRONICS MODEL 304T & 304VT
REPLACEMENT PARTS CONTINUED

Symbol No.	Description	Part No.
	MO-6 VARIABLE SPEED ASSEMBLY	
1	6-32 Hex Nut (Obtain locally)	
2	No. 6 Flat Metal Washer (Obtain locally)	
3	Mounting Plate	SM-186
4	6-32 Lock Nut	NU-1
5	Toggle Nut	HW-151
6	Toggle Nut Washer	HW-177
7	Magnet & Pole Piece Assy	FP-105
8	Fiber Washer	WA-28
9	Sheet Metal Screw	PK-20
10	Set Screw	HW-69
11	Variable Speed Disc	FP-32
12	Connecting Rod	HW-153
13	Sheet Metal Screw	PK-21
14	Drive Arm	SM-189
15	Teflon Washer	WA-14
16	Control Knob	KN-28
	MECHANICAL ASSEMBLY	
	Brake Spring	HW-240
	Brake Tip	HW-49
	Pause Cam	SM-406
	Torsion Spring	HW-238
	Brake	HW-143
	Pause Washer	WA-14
	Turntable	TU-2
	Turntable Pad	TU-2-1
	PICKUP ARM ASSEMBLY	
	Pickup Arm with 9J Cartridge	PK-45
	9J Cartridge & Needle Replace with	89T
	Spacer	SP-3
	Spacer	SP-7
	Pickup Arm Washer	PI-34-2
	Grommet	GR-9
	Pickup Arm Nut	PI-34-1
	Pickup Arm Rest	HW-557
	MISCELLANEOUS	
	Transformer	TP-18
	Speaker	SS-25
	Lamp	DL-6
	Fuse (6/10 Amp Slo-Blo)	FS-6
	Amplifier Control Knobs	KN-29
	Pause Control Knob	KN-28
	3 Wire A/C Cord	CO-88
	Ext. Speaker Jack	PJ-24
	Case	CS-356
	Motor Board Mounting Springs	HW-618
	(304VT Serial Numbers below 880357 order set of four)	HW-606

Note: Resistors and Capacitors are standard values, and should be obtained locally.